

Fig. 1

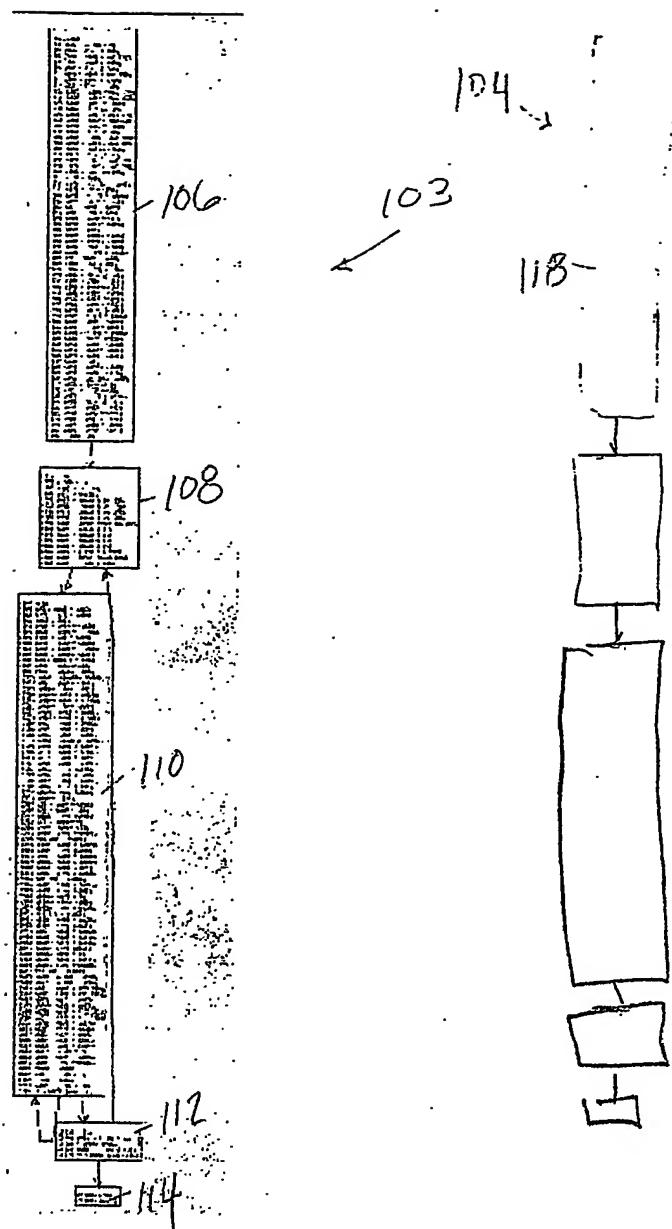
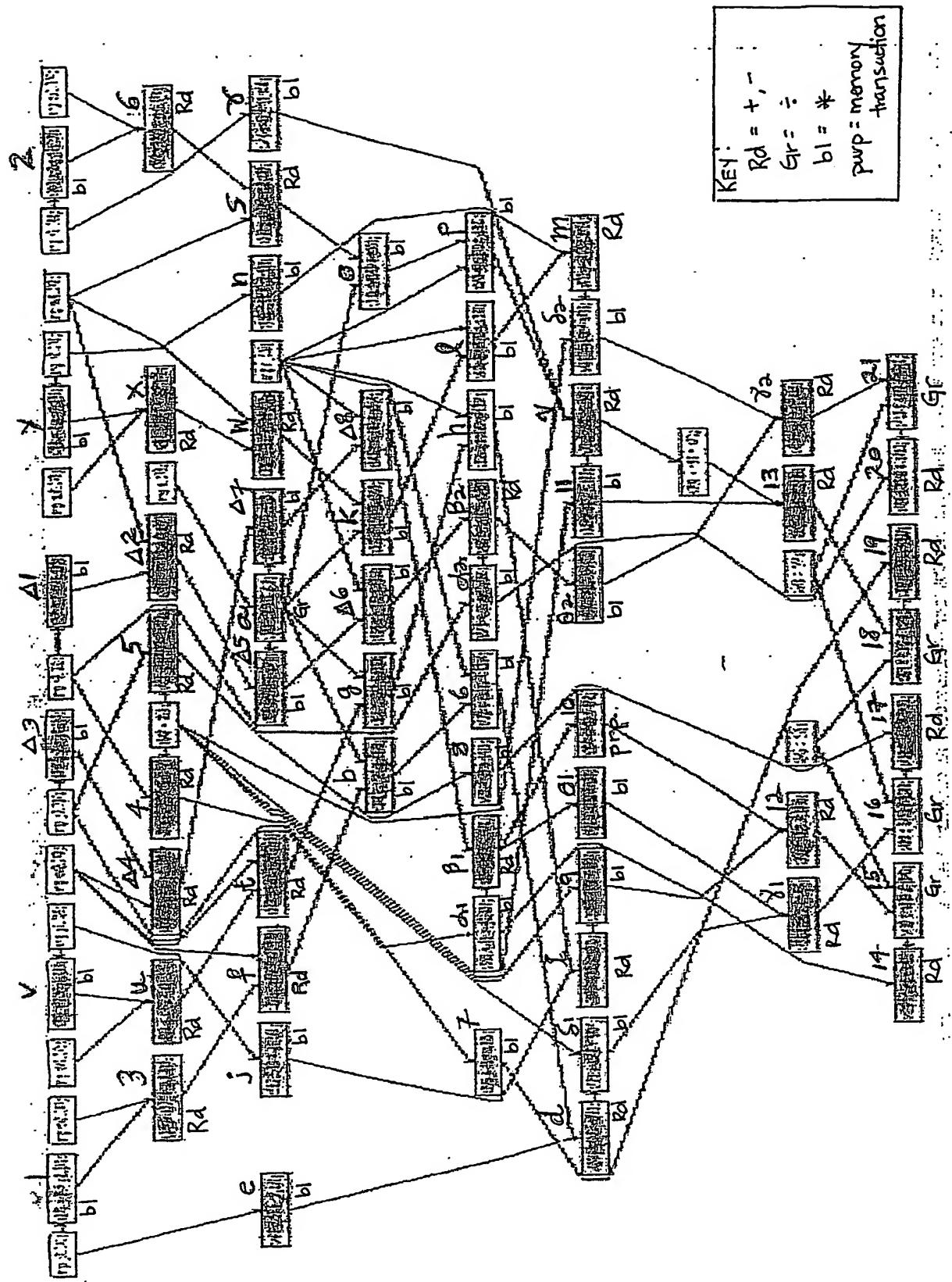


Fig. 2

(1)	1.25 =	$z_1 z_3 / z_1$
(2)	1.241 =	$z_1 z_3 / z_2$
(3)	1.249 =	$z_1 z_3 / z_4$
(4)	1.248 =	$z_1 z_3 / z_5$
(5)	1.241 =	$z_1 z_3 / z_6$
(6)	1.249 =	$z_1 z_3 / z_7$
(7)	1.241 =	$z_1 z_3 / z_8$
(8)	1.249 =	$z_1 z_3 / z_9$
(9)	1.241 =	$z_1 z_3 / z_{10}$
(10)	1.247 =	$z_1 z_3 / z_{11}$
(11)	1.241 =	$z_1 z_3 / z_{12}$
(12)	1.239 =	$z_1 z_3 / z_{13}$
(13)	1.231 =	$z_1 z_3 / z_{14}$
(14)	1.239 =	$z_1 z_3 / z_{15}$
(15)	1.231 =	$z_1 z_3 / z_{16}$
(16)	1.234 =	$z_1 z_3 / z_{17}$
(17)	1.236 =	$z_1 z_3 / z_{18}$
(18)	1.237 =	$z_1 z_3 / z_{19}$
(19)	1.231 =	$z_1 z_3 / z_{20}$
(20)	1.239 =	$z_1 z_3 / z_{21}$
(21)	1.231 =	$z_1 z_3 / z_{22}$
(22)	1.239 =	$z_1 z_3 / z_{23}$
(23)	1.231 =	$z_1 z_3 / z_{24}$
(24)	1.234 =	$z_1 z_3 / z_{25}$
(25)	1.236 =	$z_1 z_3 / z_{26}$
(26)	1.237 =	$z_1 z_3 / z_{27}$
(27)	1.231 =	$z_1 z_3 / z_{28}$
(28)	1.239 =	$z_1 z_3 / z_{29}$
(29)	1.231 =	$z_1 z_3 / z_{30}$
(30)	1.234 =	$z_1 z_3 / z_{31}$
(31)	1.236 =	$z_1 z_3 / z_{32}$
(32)	1.237 =	$z_1 z_3 / z_{33}$
(33)	1.231 =	$z_1 z_3 / z_{34}$
(34)	1.239 =	$z_1 z_3 / z_{35}$
(35)	1.231 =	$z_1 z_3 / z_{36}$
(36)	1.234 =	$z_1 z_3 / z_{37}$
(37)	1.236 =	$z_1 z_3 / z_{38}$
(38)	1.237 =	$z_1 z_3 / z_{39}$
(39)	1.231 =	$z_1 z_3 / z_{40}$
(40)	1.239 =	$z_1 z_3 / z_{41}$
(41)	1.231 =	$z_1 z_3 / z_{42}$
(42)	1.234 =	$z_1 z_3 / z_{43}$
(43)	1.236 =	$z_1 z_3 / z_{44}$
(44)	1.237 =	$z_1 z_3 / z_{45}$
(45)	1.231 =	$z_1 z_3 / z_{46}$
(46)	1.239 =	$z_1 z_3 / z_{47}$
(47)	1.231 =	$z_1 z_3 / z_{48}$
(48)	1.234 =	$z_1 z_3 / z_{49}$
(49)	1.236 =	$z_1 z_3 / z_{50}$
(50)	1.237 =	$z_1 z_3 / z_{51}$
(51)	1.231 =	$z_1 z_3 / z_{52}$
(52)	1.239 =	$z_1 z_3 / z_{53}$
(53)	1.231 =	$z_1 z_3 / z_{54}$
(54)	1.234 =	$z_1 z_3 / z_{55}$
(55)	1.236 =	$z_1 z_3 / z_{56}$
(56)	1.237 =	$z_1 z_3 / z_{57}$
(57)	1.231 =	$z_1 z_3 / z_{58}$
(58)	1.234 =	$z_1 z_3 / z_{59}$
(59)	1.236 =	$z_1 z_3 / z_{60}$
(60)	1.237 =	$z_1 z_3 / z_{61}$
(61)	1.231 =	$z_1 z_3 / z_{62}$
(62)	1.239 =	$z_1 z_3 / z_{63}$
(63)	1.231 =	$z_1 z_3 / z_{64}$
(64)	1.234 =	$z_1 z_3 / z_{65}$
(65)	1.236 =	$z_1 z_3 / z_{66}$
(66)	1.237 =	$z_1 z_3 / z_{67}$
(67)	1.231 =	$z_1 z_3 / z_{68}$
(68)	1.234 =	$z_1 z_3 / z_{69}$
(69)	1.236 =	$z_1 z_3 / z_{70}$
(70)	1.237 =	$z_1 z_3 / z_{71}$

104

Fig. 3



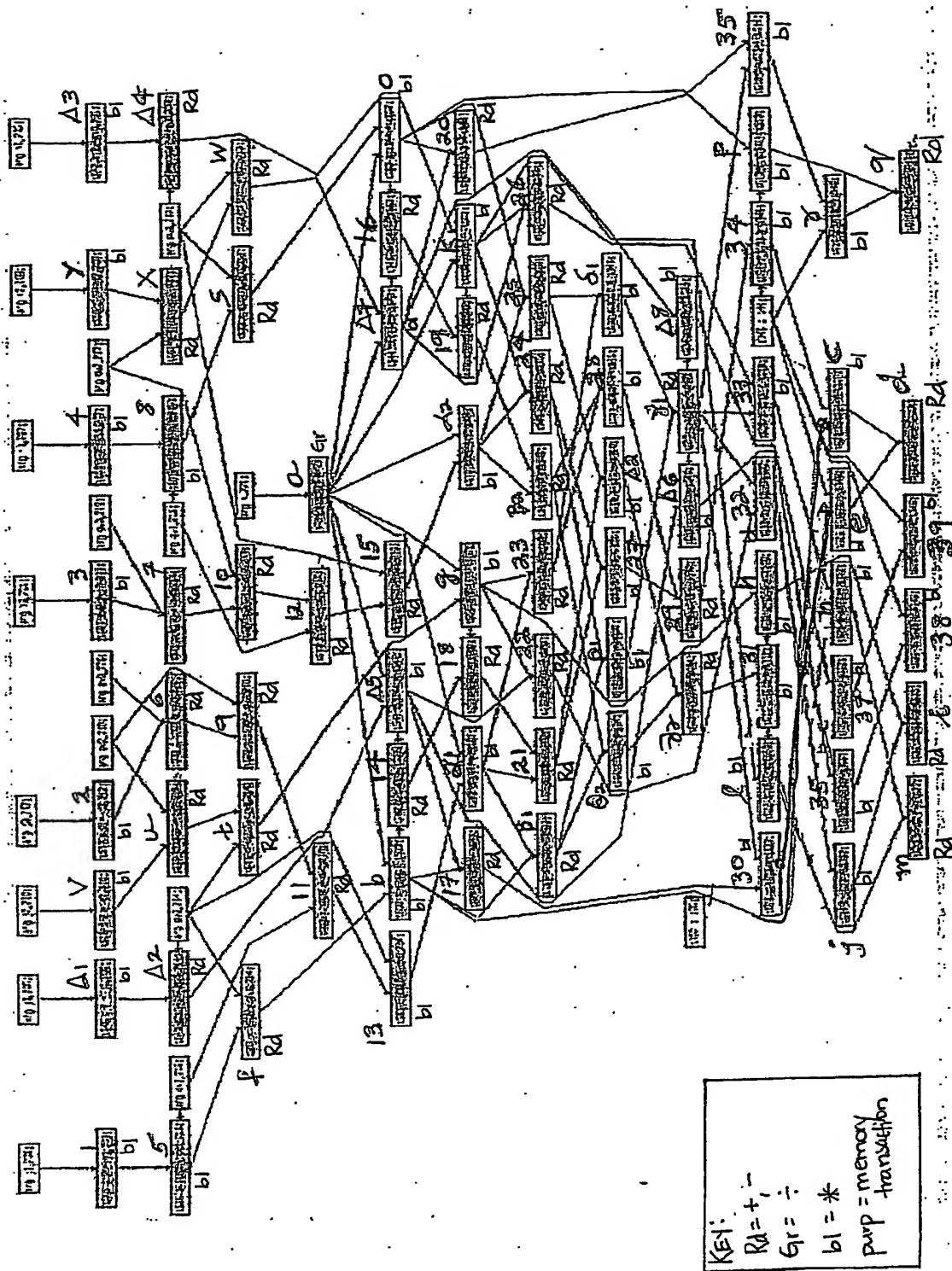


Fig. 4(b)

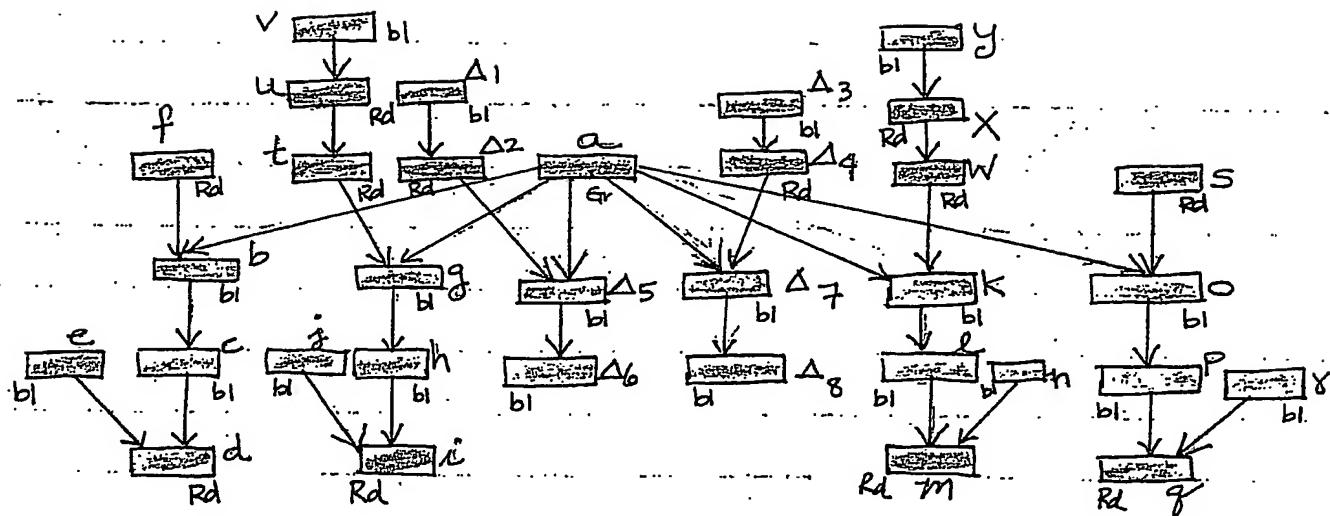
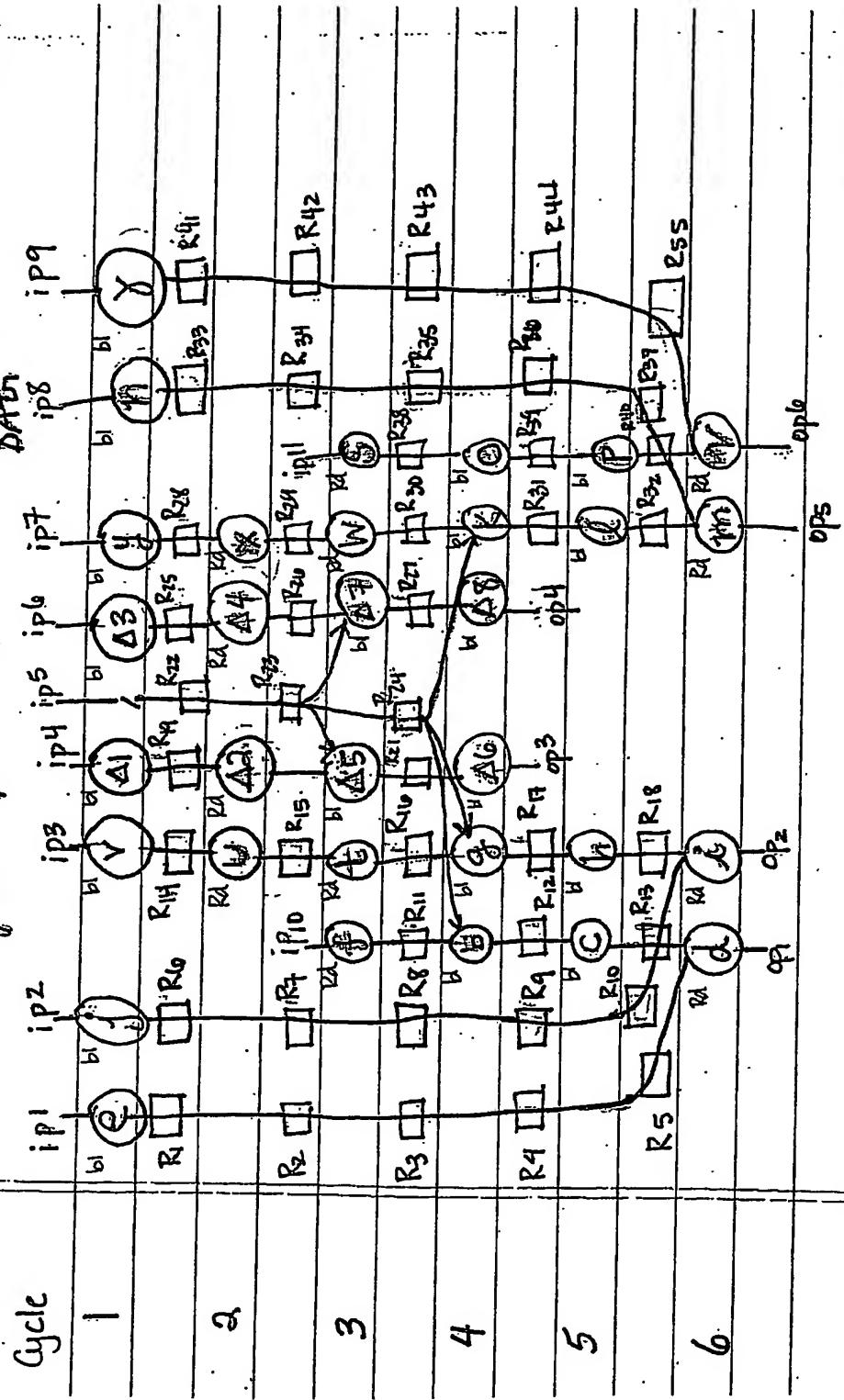


Fig. 5

KEY:

- Rd** = +, -
- Gr** = \div
- bl** = *
- pure** = memory transaction

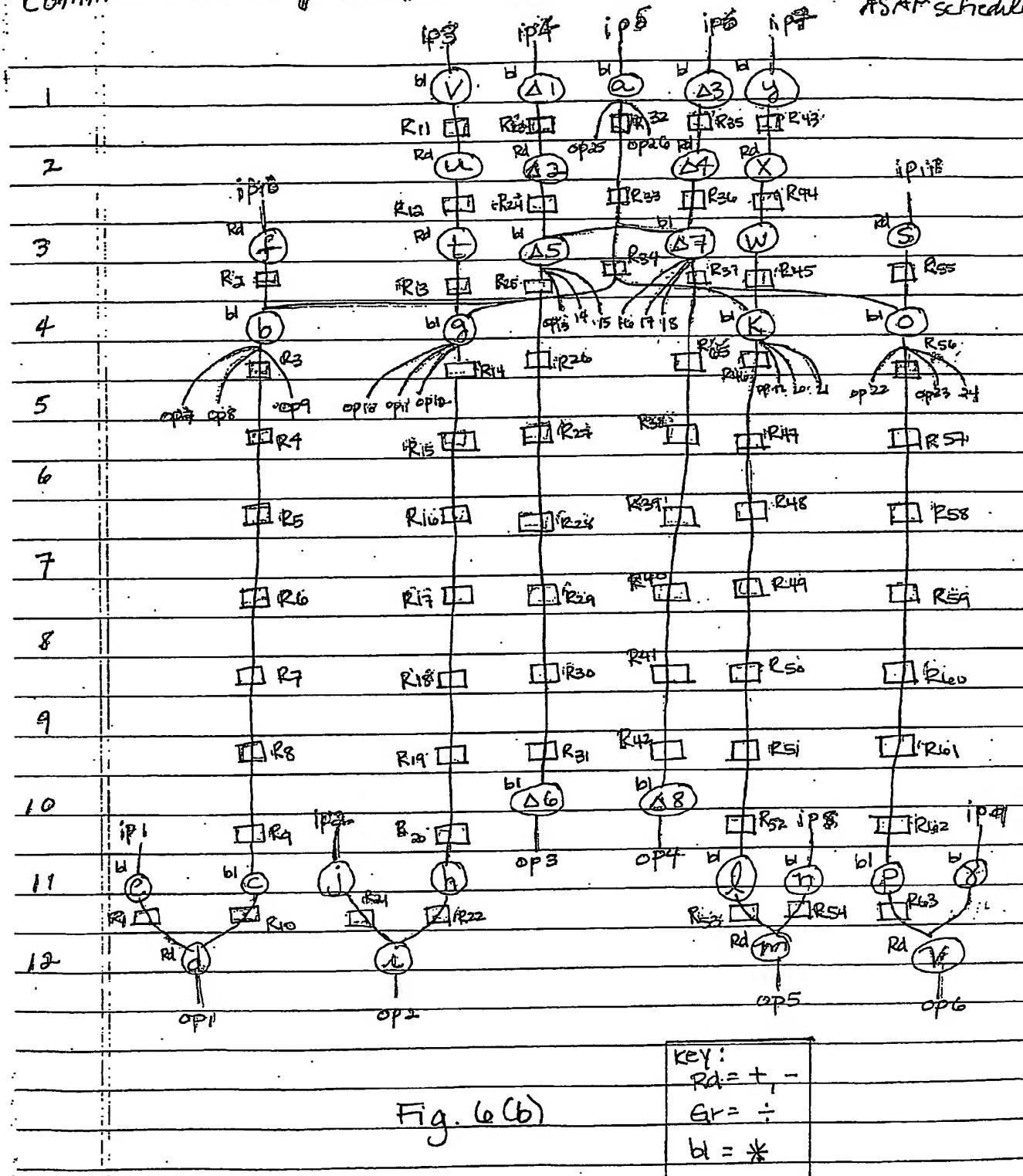
Common L-L diagram of Example mapped onto Affine with ASAP schedule



Key:
 $Rd = +$
 $Gr = \div$
 $bl = *$

Fig. 6(a)

Common LCS-6s of Example mapped onto Perspective DAG with ASAP schedule



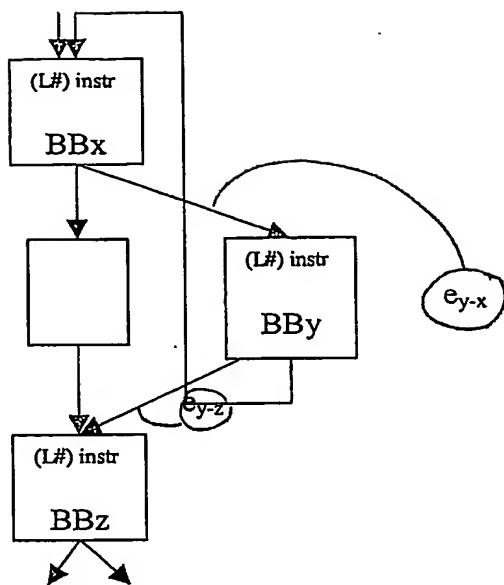


Fig. 7

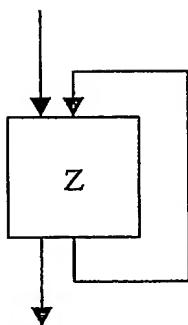


Fig. 8

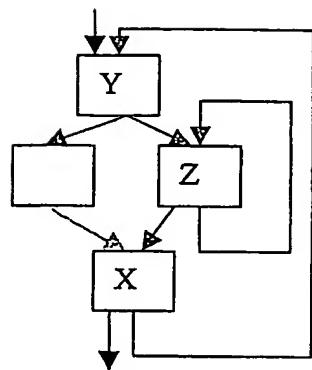


Fig. 9 (a)

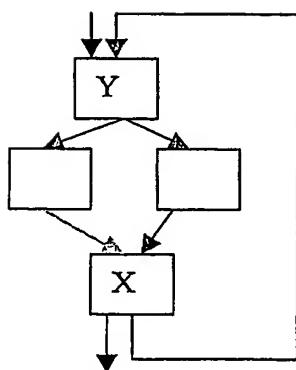


Fig. 9 (b)

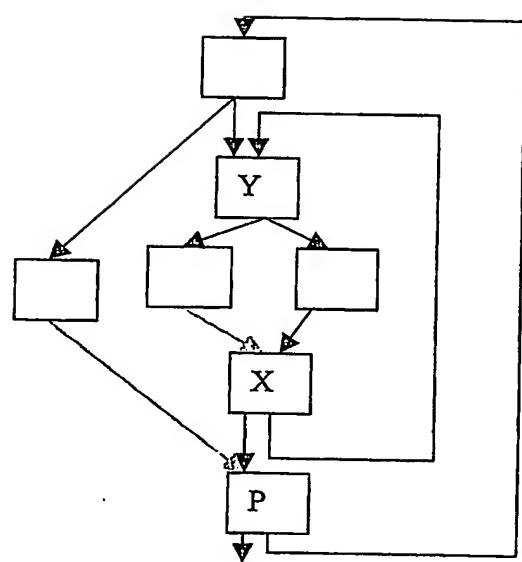


Fig. 10

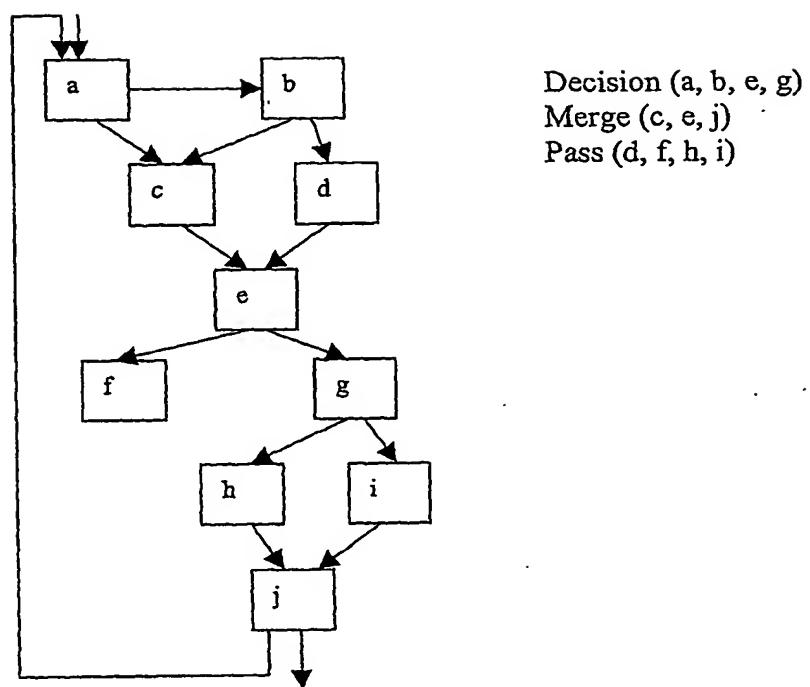


Fig. 11

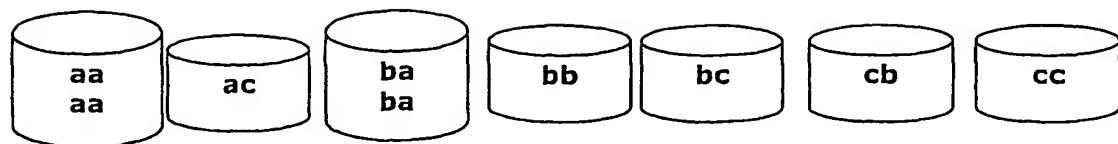
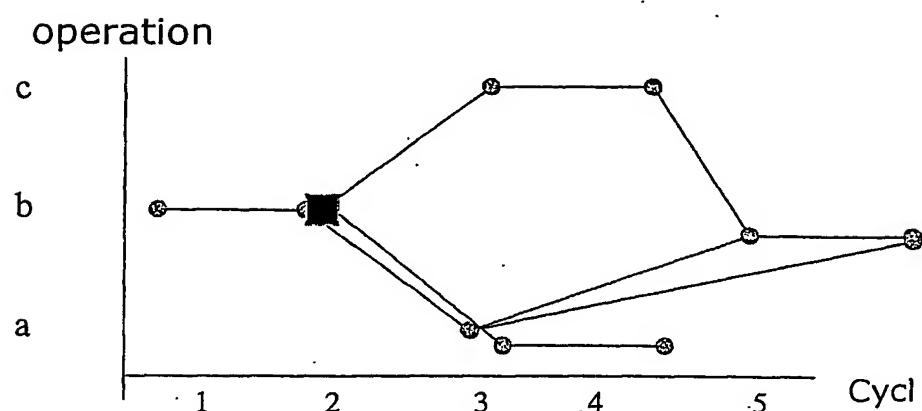
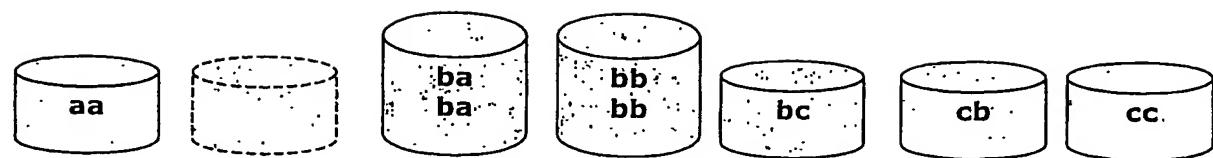


Figure 12: First Graph's edges arranged into a Bin Sequence



Graph number 2, Figure 13: The Second Graph



13(e)
Figure 14: The Second Graph arranged in a Modified Bin Sequence

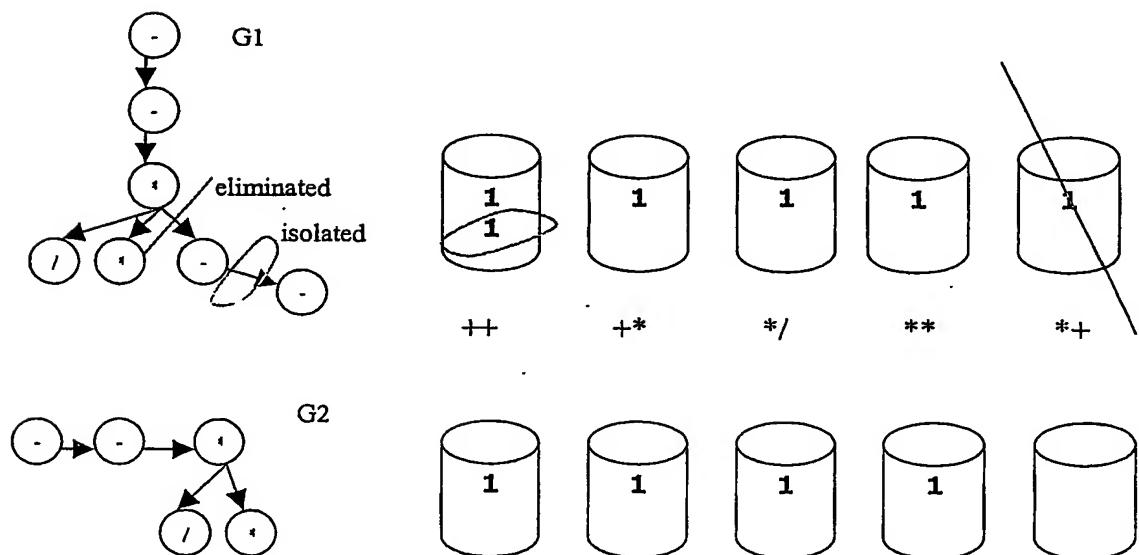


Fig. 14

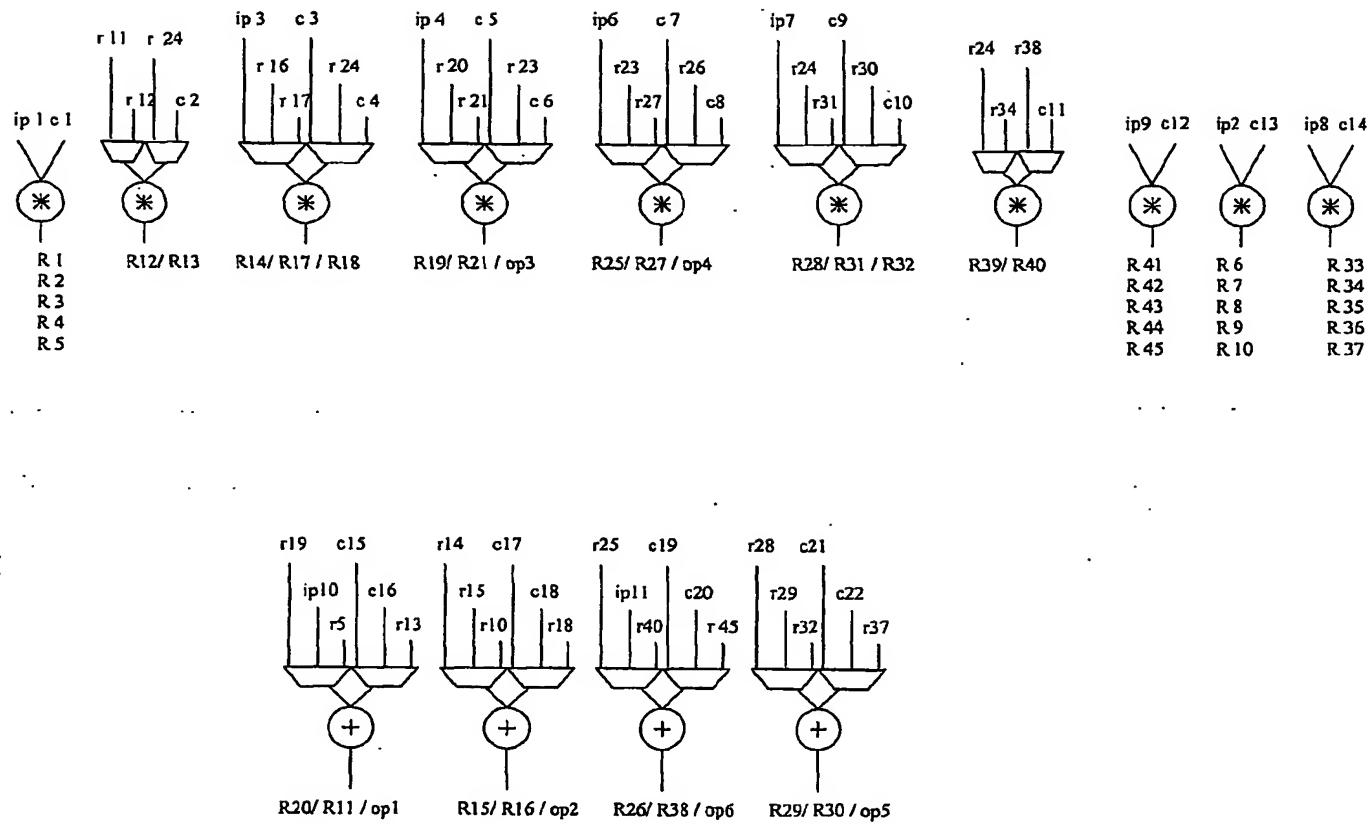
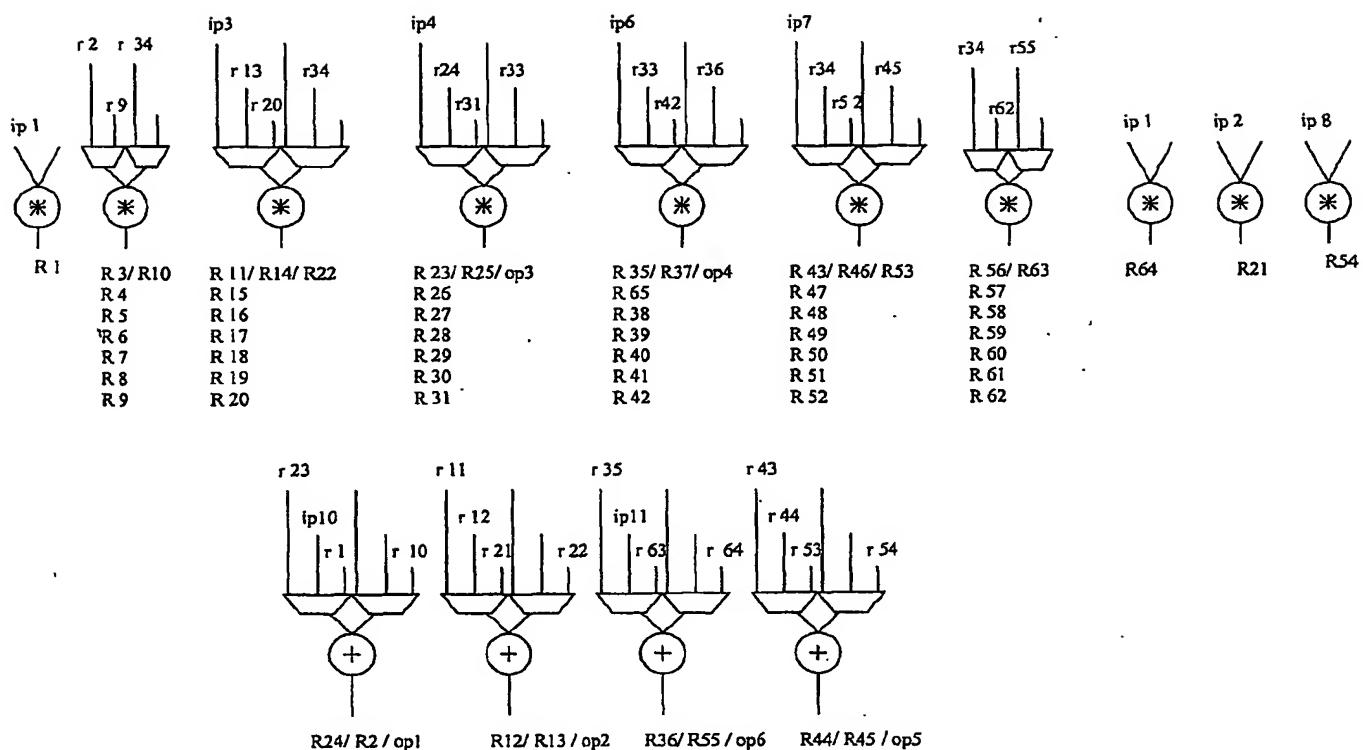


Fig:X Affine preloop common architecture after ASAP schedule



Note: All inputs unmarked indicate constants.

Figure 7: Perspective preloop common architecture after ASAP schedule

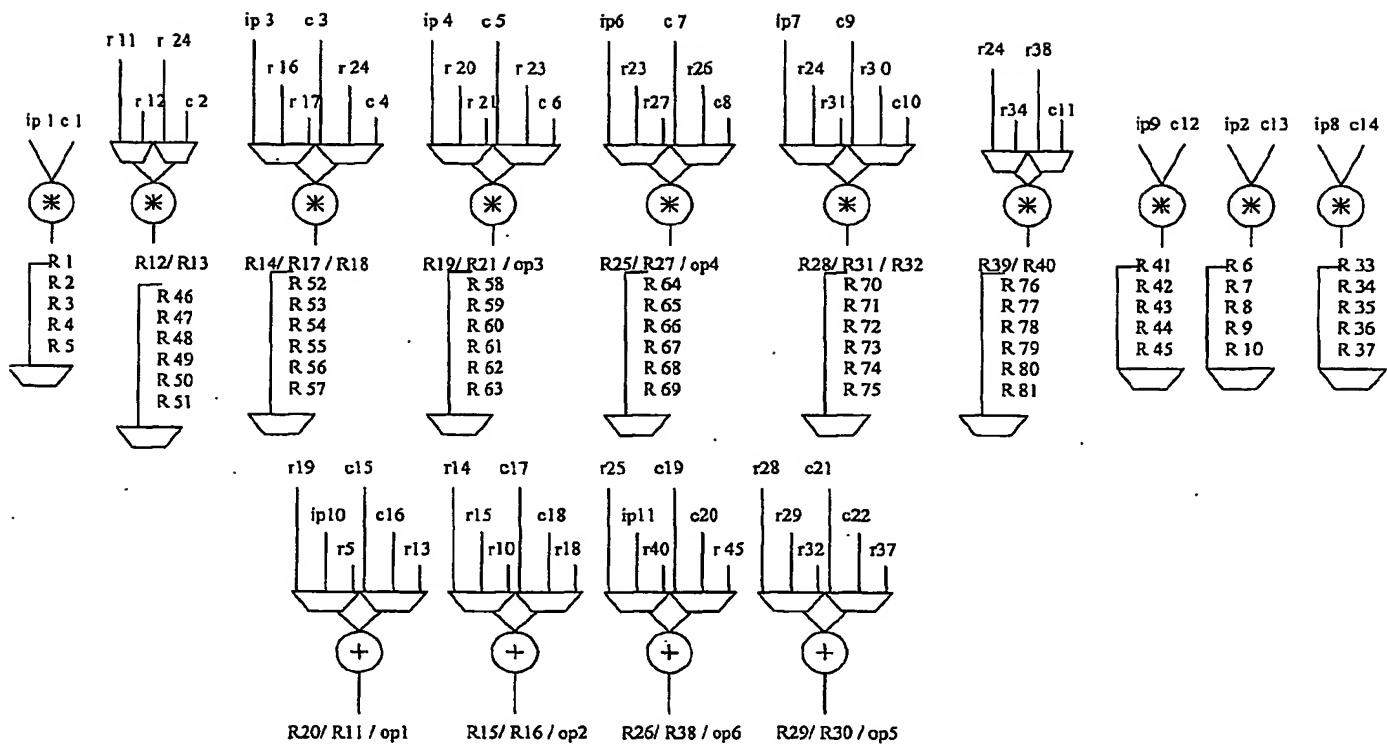


Figure 2 Common architecture with multiplexers in delay paths to accommodate both affine and perspective instantiations.

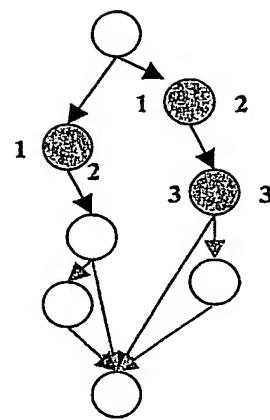
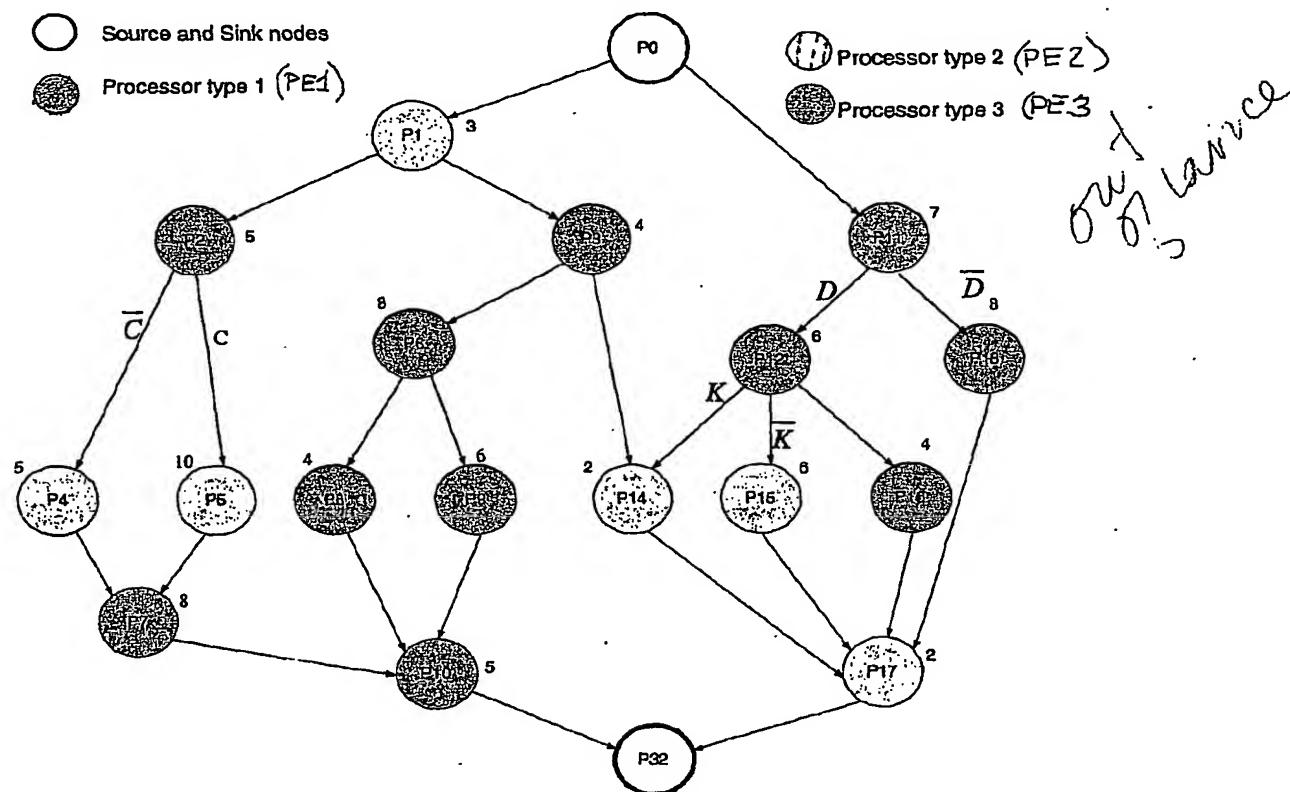


Figure 12: Path based edge activation

~~Illustrative example for our scheduling algorithm~~

Q This example demonstrates ~~the~~ initialization strategy. It describes how the CDFG is split into individual DFGs. Moreover, it also shows the various fields required for each node and edge.

A. Initial CDFG:



For the CDFG of Fig. 13x

B. Initialization of CDFG data structure and Branching tree *proceeds as follows:*

Var_indices: var[0] = D; var[1] = C; var[2] = K;

Assume number of processing elements of type = 1

Branching tree paths: DCK, DCK', DC'K, DC'K', D'CK, D'CK', D'C'K, D'C'K'

Branching tree paths not possible: D'CK, D'CK', D'C'K, D'C'K'

Removing K we get: D'C, D'C'

Final Branching tree paths: DCK, DCK', DC'K, DC'K', D'C, D'C'.

Tables XX and YY are the node and edge lists, respectively, for the CDFG of Fig. 13x. Figs. 14x - 19x are the individual Data Flow Graphs (DFGs) of the CDFG of Fig. 13x.

C. List of individual DFGs:

DFG[0] \rightarrow DCK

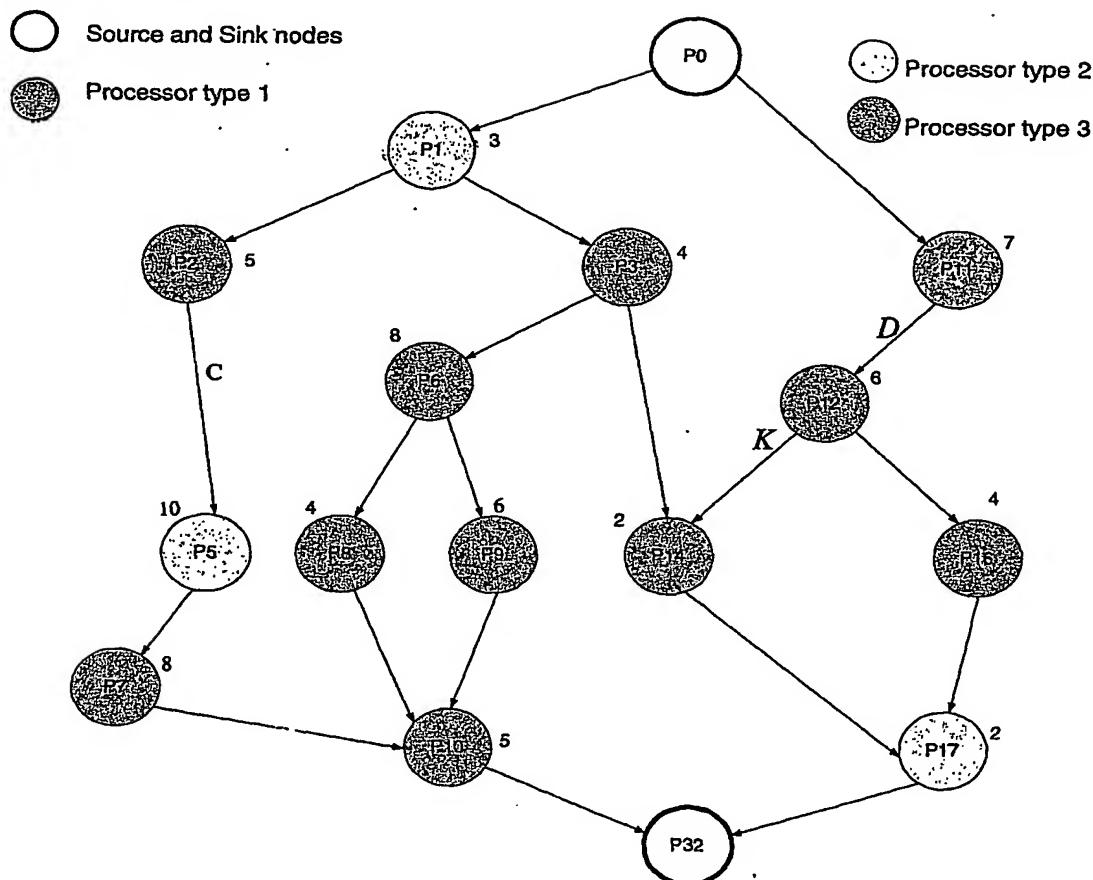


Fig 14x

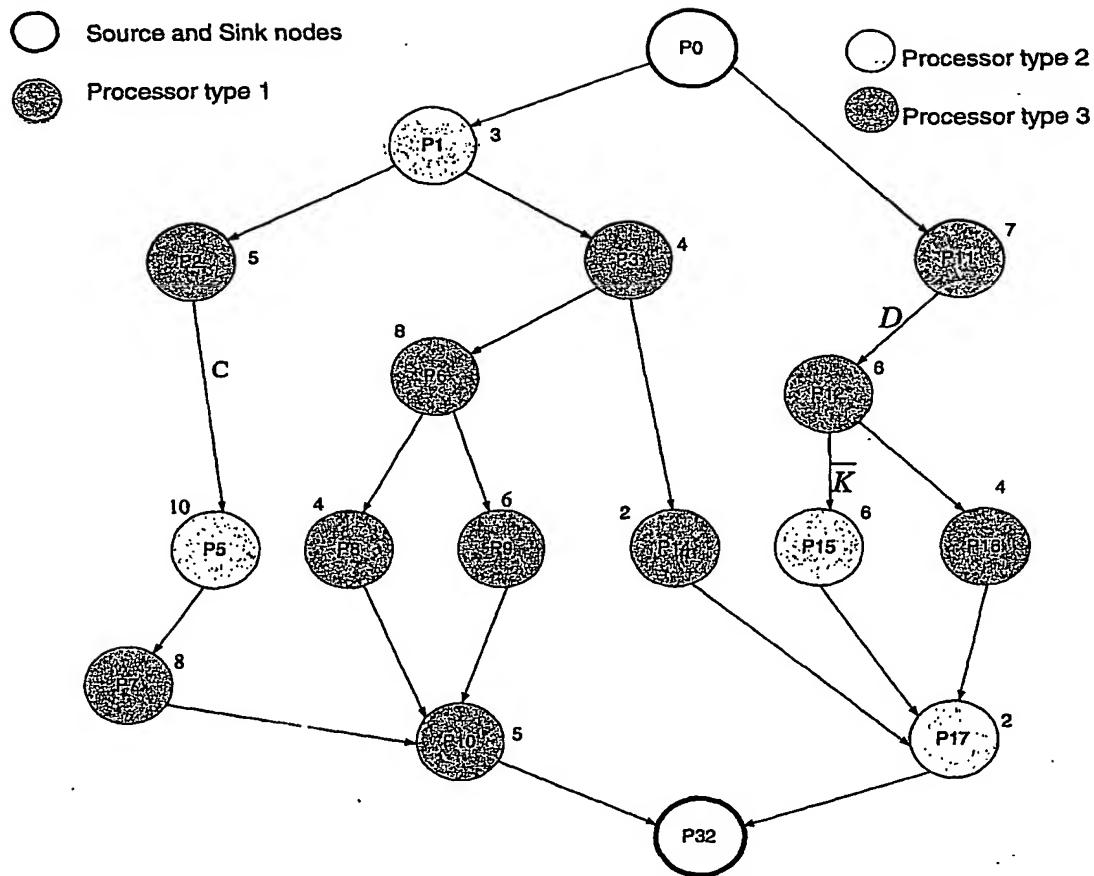
DFG[1] \rightarrow DCK'

Fig. 15x

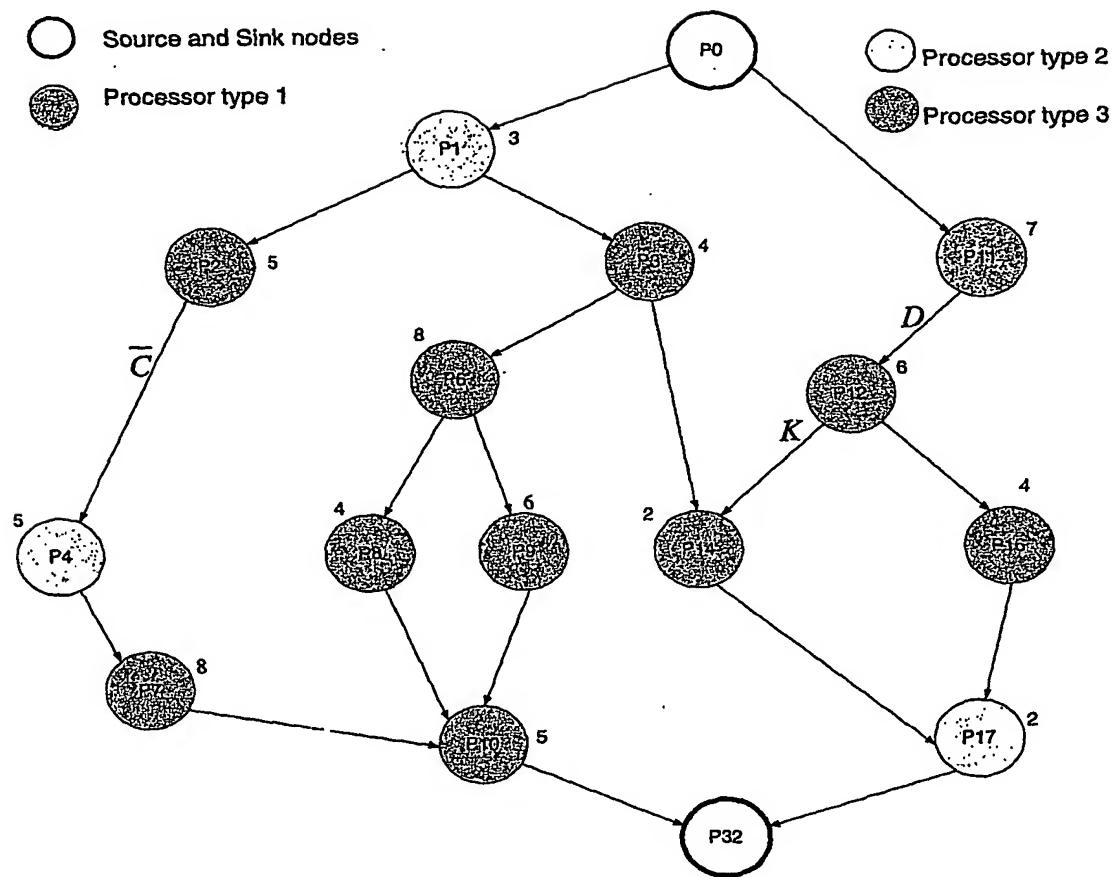
DFG[2] \rightarrow DC'K

Fig. 16x

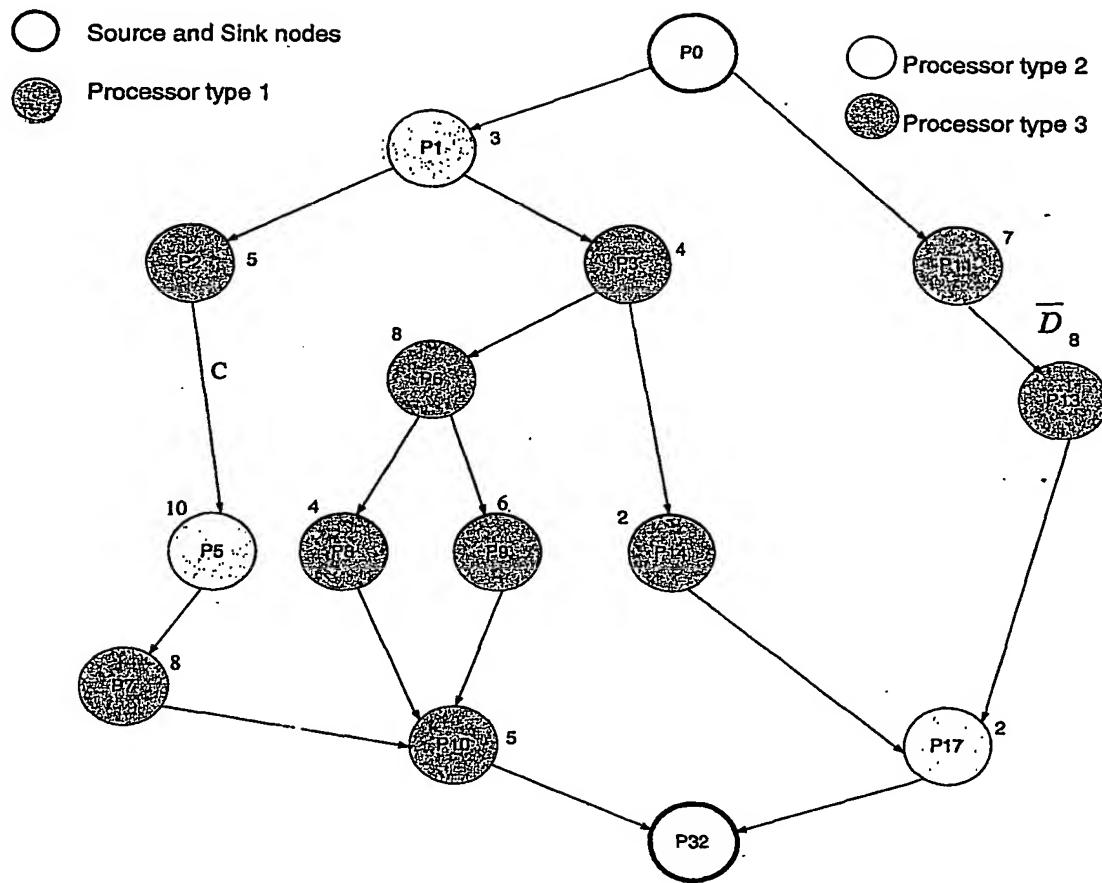
DFG[4] \rightarrow D'C

Fig 18x

$DFG[5] \rightarrow D'C'$

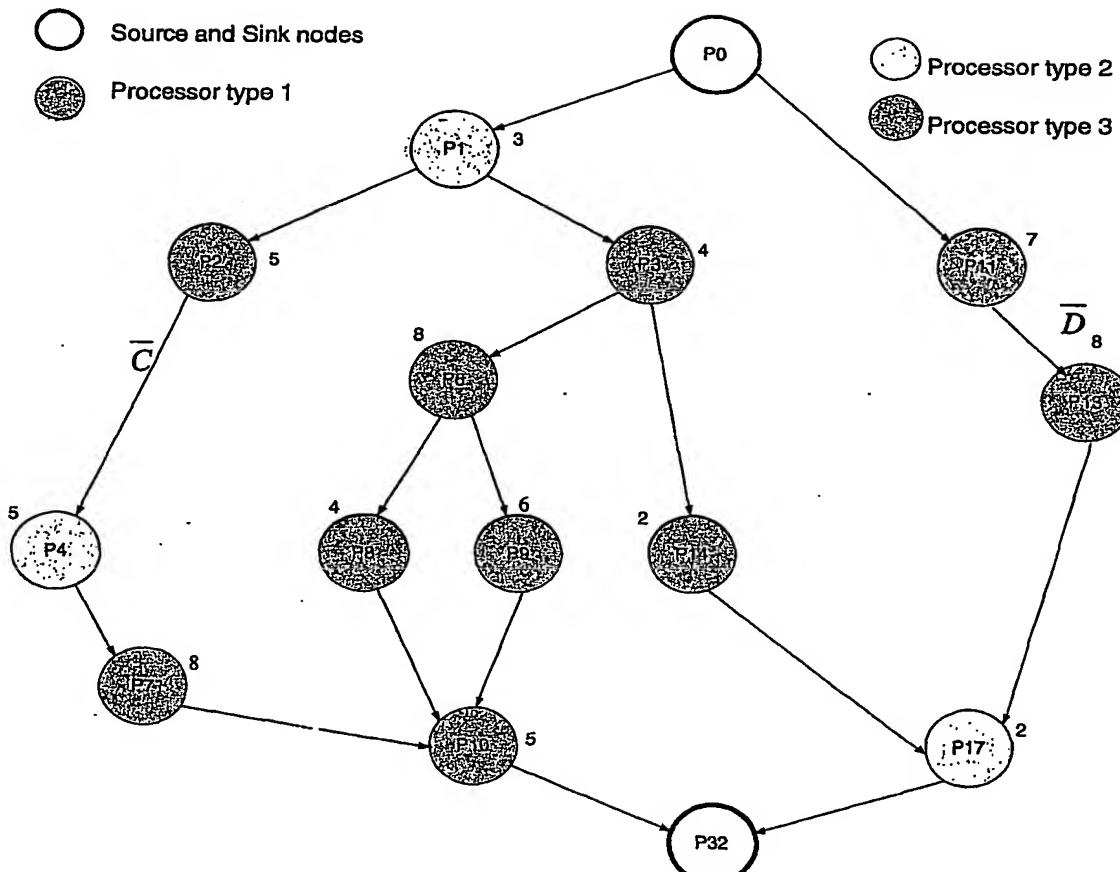
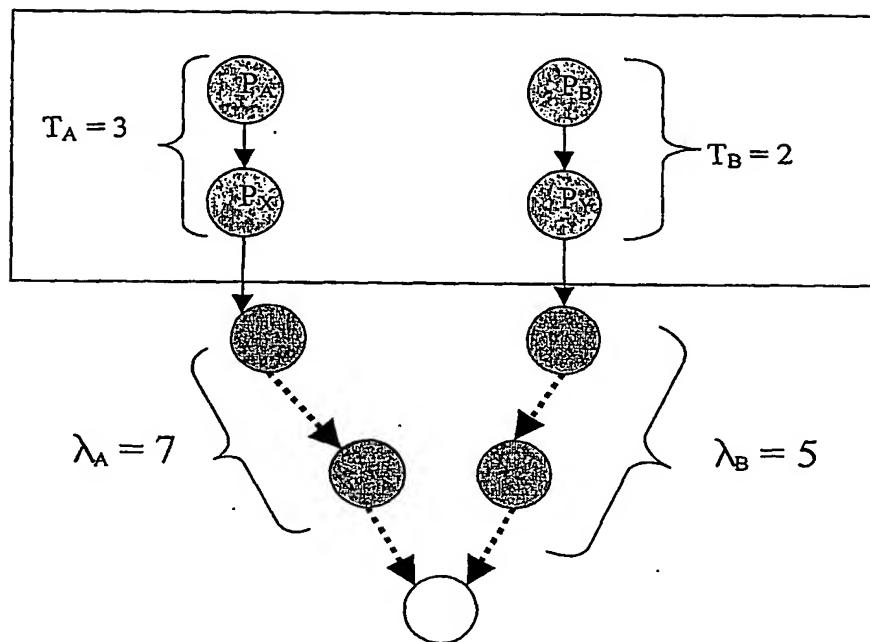
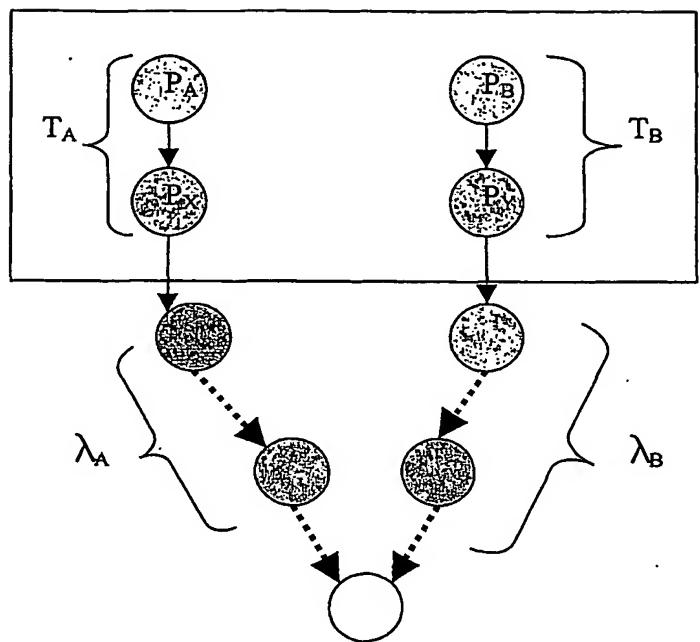
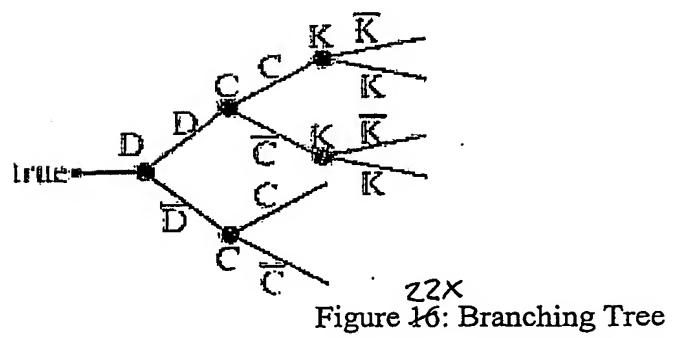
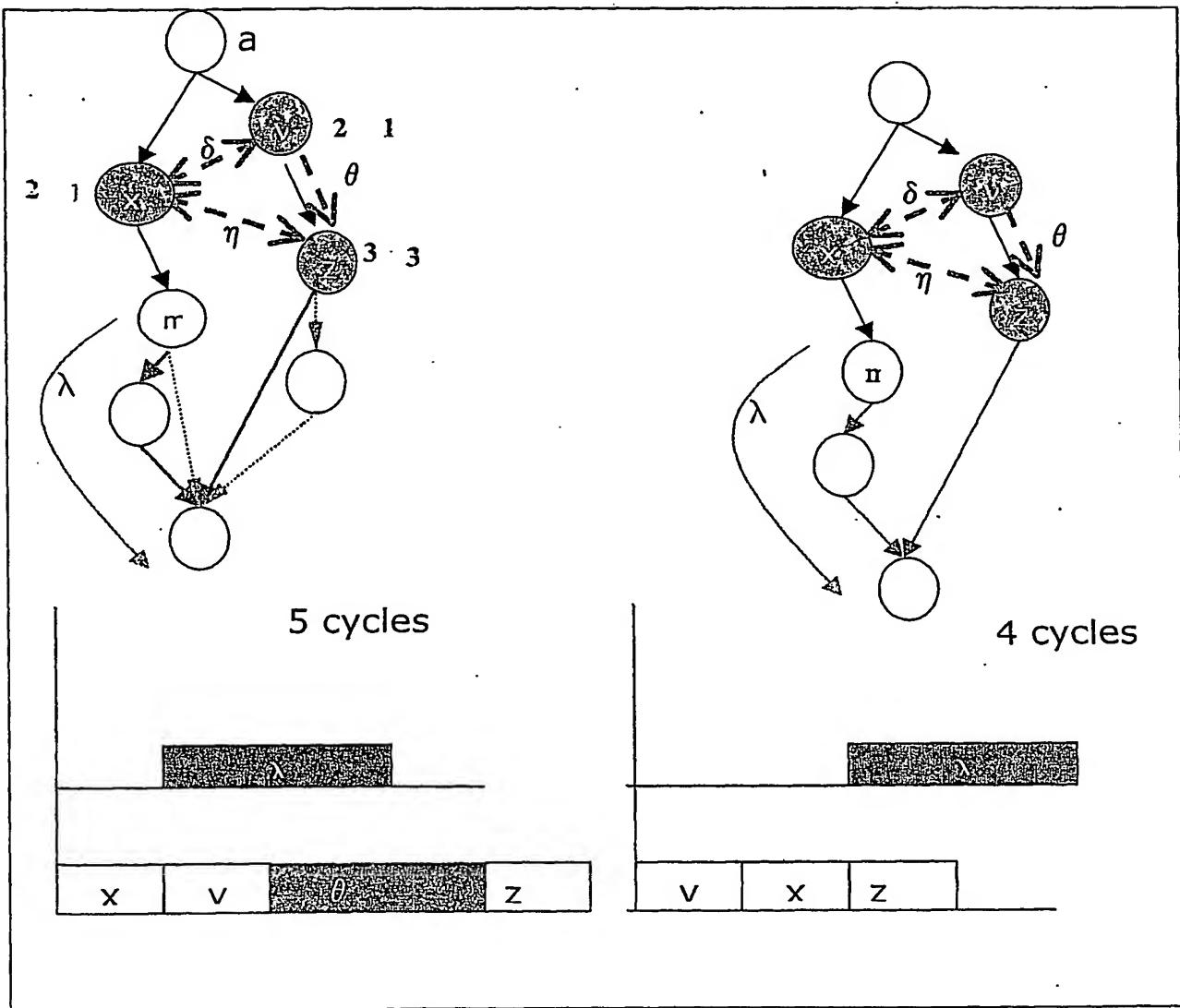


Fig 19x



20X
Figure 15: PCP Scheduling with Resource Dependencies in the Partial Path Region

2/14
Figure 14: PCP based Scheduling2/22
Figure 16: Branching Tree



23x
Figure 17: Influence of Reconfiguration time on Scheduling

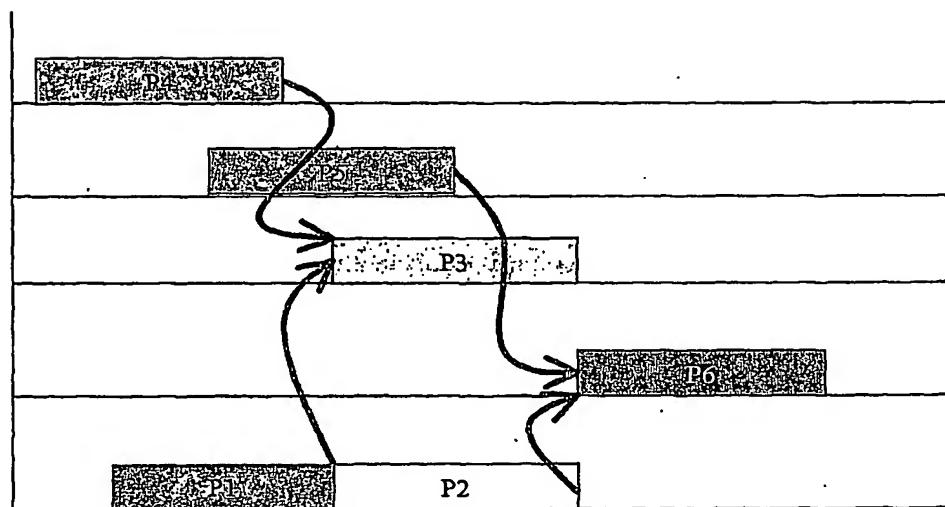


Figure 18: Scheduled Process Charts with Resource and Data Dependency
24X

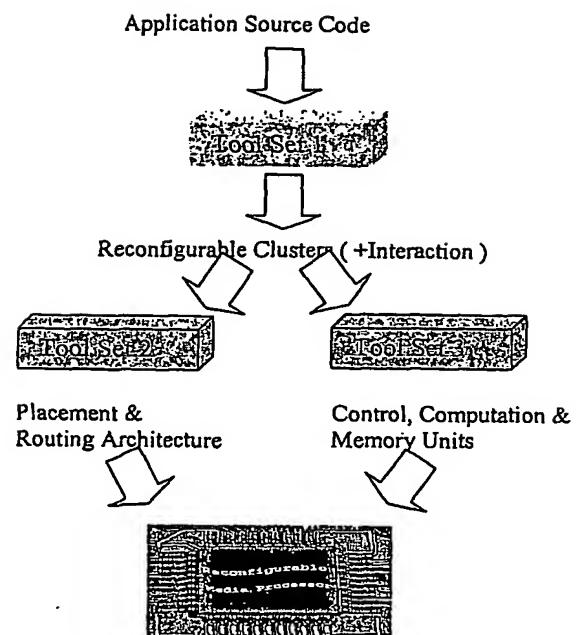
	Expression α	Expression β	Expression θ	Expression γ
Process A		0		
Process B		10		
.....				
.....				

	Expression α	Expression β	Expression θ	Expression γ
Process A		30		
Process B		40		
.....				
.....				

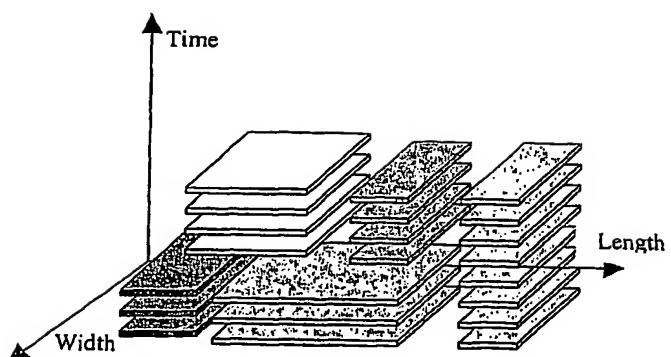
↓

and so on.

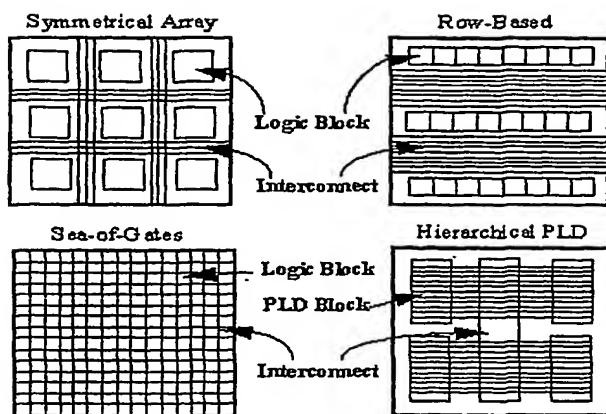
25X
Figure 19: Dynamic Entry Updates in the NSM and LSMS



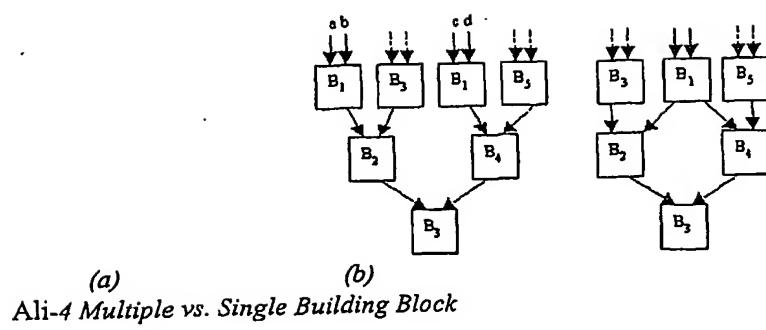
Ali-1 Tool Set Overview

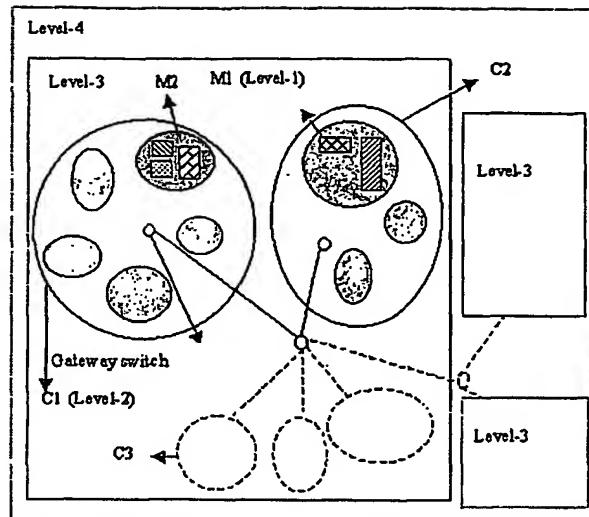


Ali-2 Constraints

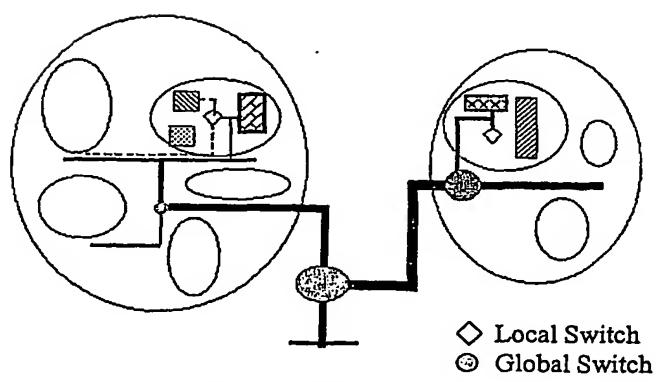


Ali-3 Routing Architecture Overview

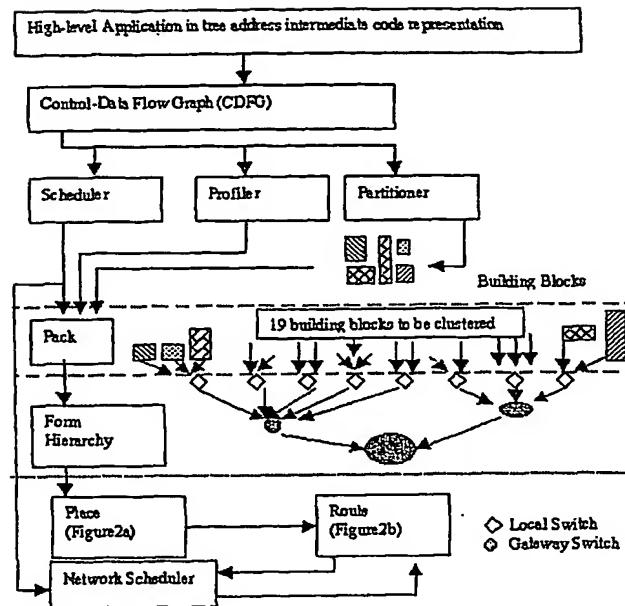




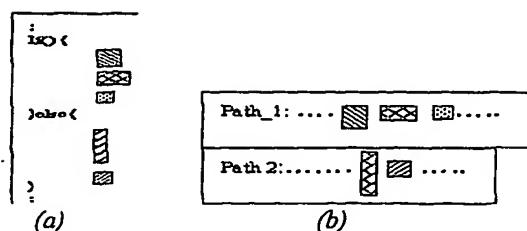
Ali-5 Overall Architecture



Ali-6 Switching



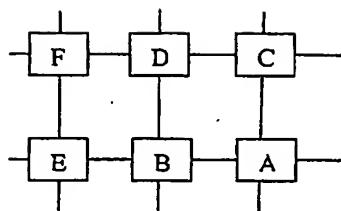
Ali-7 Methodology



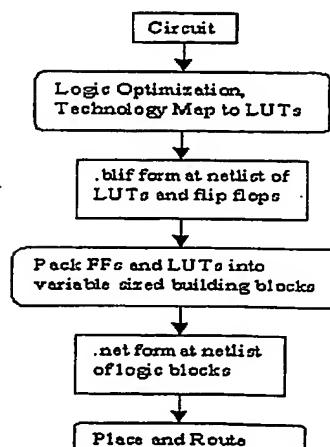
Ali-8 Control Flow Effect on Clusters

	A	B	C	D	E	F
A	0	X	X	X	X	X
B	5	0	X	X	X	X
C	6	0	0	X	X	X
D	4	3	7	0	X	X
E	1	4	1	0	0	X
F	3	0	4	5	3	0

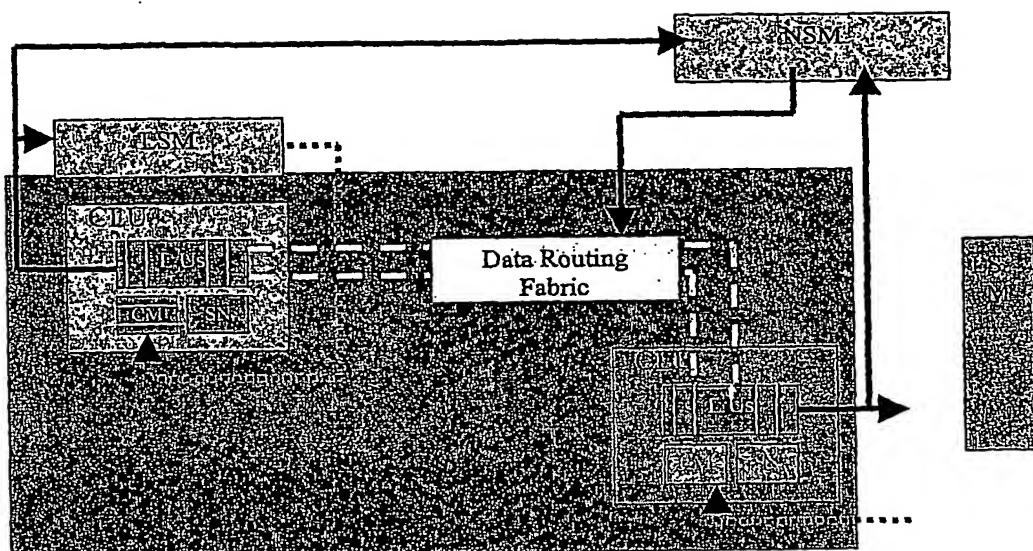
Ali-9a Cost matrix



Ali-9b Pre-placement



Ali-10 Design Flow



CLU = Configurable Logic Unit; LU = Logic Units; SN = Switching Network
CM = Configuration Memory; LSM = Logic Schedule Manager

Figure 21: The Internals of the Reconfigurable Unit

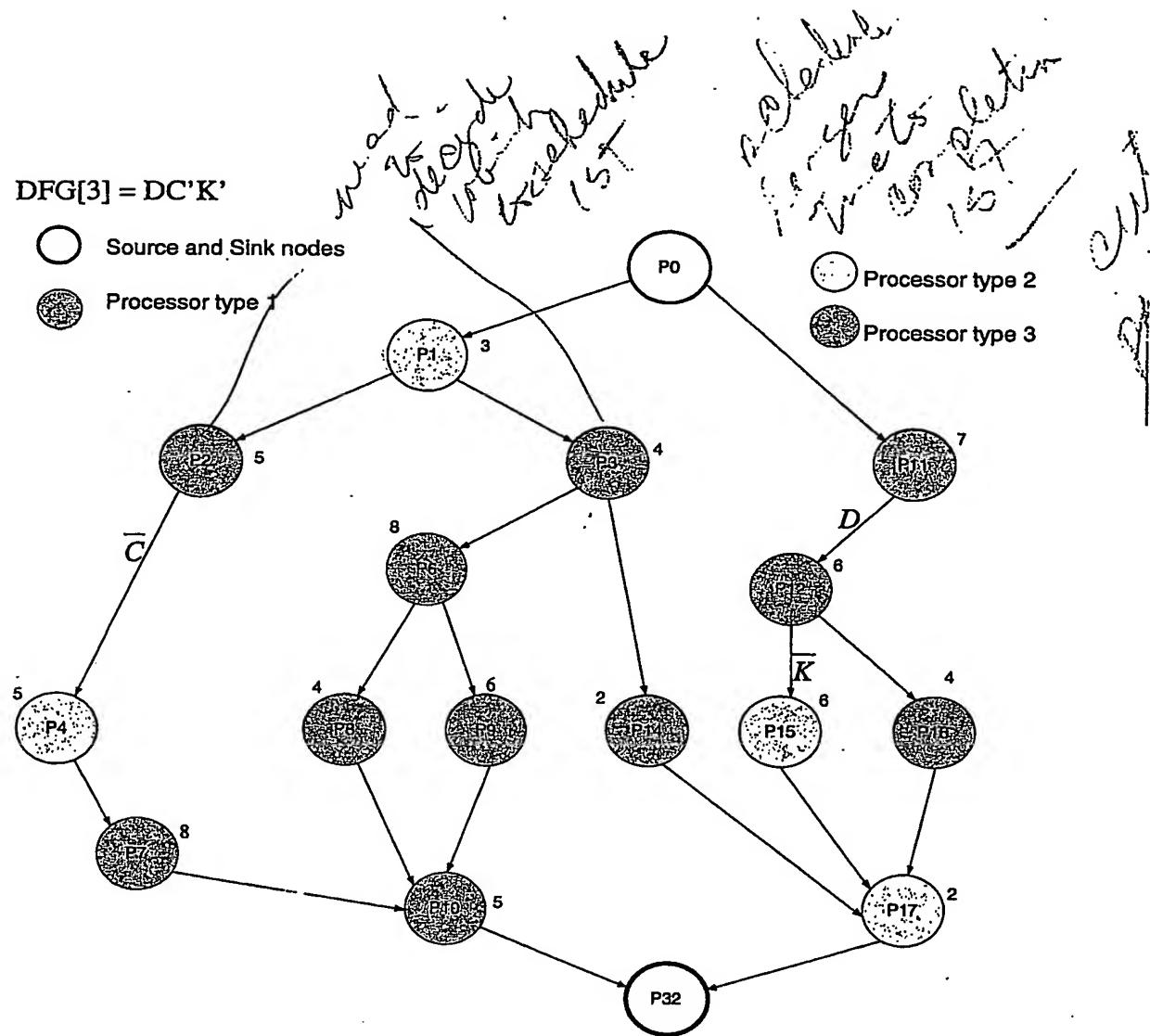


Fig 17x

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